

The Governor's School of New Jersey



Application for the 2015 Governor's School in the Sciences at Drew University July 12 – August 1, 2015

Please read entire package.
Applications that are incomplete, do not conform to the application instructions,
or do not meet deadlines will not be considered.

PROGRAM OVERVIEW

The Governor's School in the Sciences (GSS) brings the best science and mathematics students of the state together for a three-week summer residential program held on the campus of Drew University. The program exposes these exceptional scholars to courses, laboratories, team projects, and special lectures that encourage them to explore a career in science and math. This is enhanced by a Career Day, where alumni join other professionals in sharing their experiences.

There are no examinations or grades, and the program emphasizes group learning and collaboration in the work and study students do during the program. The program seeks to create an atmosphere of collaboration, study, and socializing in the residence hall through activities supervised by staff who promotes the concept of a community of interested scholars. Consequently, scholars experience a taste of what college will be like.

The program is free of tuition and fees. Funds are raised from private and corporate sponsors. Scholars for this summer's program are selected based on the excellence of their academic performance, written essays, standardized test scores, math and science teacher recommendations, and extracurricular activities in and out of science.

ELIGIBILITY

To be considered for the Governor's School in the Sciences, a student must meet the following criteria:

- The student must be a New Jersey resident and be a high school junior during the 2014-2015 school year.
- The student must have a very strong interest in the sciences and be committed to the acquisition of knowledge and the pursuit of opportunities in that field.
- The student must be willing to live on campus for the duration of the program. Saturdays and Sundays make up part of the program; there will be no weekend leaves of absence.
- The student must be one of the top students in his or her school. The student should have primarily "A" grades in honors math and science classes and outstanding scores on standardized achievement tests. Students who have demonstrated very strong scientific abilities outside the classroom can also be strong candidates for the Governor's School in spite of weaker standardized test scores.
- Competitive candidates often rank in the top 5% of their class and score above the 90th percentile on standardized tests. A student whose standardized test scores are below the 90th percentile but rank among the best in his/her school may still apply if he or she is otherwise qualified.

The Governor's School encourages all qualified applicants regardless of sex, race, color, creed, national origin, or physical handicap.

PROGRAM DESCRIPTION

Core courses in a variety of different areas of science and mathematics (anthropology, biology, chemistry, mathematics, physics) address aspects of science and mathematics not usually seen in either high school or in the first year of college. Each student takes three core courses. The core courses offered in 2014 were:

- *Concepts of Chemical Bonding: An Introduction to Molecular Orbital Theory*
- *Cell Biology and Cancer*
- *Special Relativity*
- *Neurobiology*
- *Rulers, Compasses, and Famous Impossibilities*
- *Biological Anthropology: Human Evolution*

Laboratory courses provide the scholars with innovative experiments. Each scholar takes one lab course. The 2014 labs were:

- Experiments in Biology
- Experiments in Organic Chemistry
- Experiments in Computer Science
- Experiments in Archaeology
- Experiments in Biochemistry
- Experiments in Physics

Team Projects provide scholars with the opportunity to work in small teams under faculty guidance on mini-research topics. Results are presented at The David Miyamoto Scholars Conference. There were eight team projects in 2014:

- *Project in Mathematical Physics – Rocket Science*
- *Project in Psychology – Cognitive Illusions*
- *Project in Chemistry – Organometallic Chemistry: The Quest for a Trans-Chelating Diphosphine Tungsten Complex*
- *Project in Psychology and Neuroscience – Olfactory Learning and Memory*
- *Project in Chemistry – Controlled-release Kinetics: Modeling Small Molecule Movement Across a Polymer Membrane*
- *Project in Archaeology – Archaeology and Materials Science: Decoding the Secrets of Ancient Ecuadorian Pottery Engineers*
- *Project in Cognitive Science – Analysis of Eye Movements*
- *Project in Ecology – How will global warming affect future plants? Effect of increased carbon-dioxide, temperature, and water on plants*

Special Events include colloquia speakers, Career Day, Talent Show, and The David Miyamoto Scholars Conference. Colloquia speakers at the 2014 program were:

- Dr. John Bochanski, Physics Professor at Rider University, former visiting Professor of Physics and Astronomy at Haverford College, former Postdoctoral Scholar at Penn State and MIT: *Exploring the Milky Way with the Next Generation of Astronomical Surveys*
- Dr. Neal C. Connors, Associate in the Research Institute for Scientists Emeriti (RISE) at Drew University, former Senior Investigator at Merck Research Laboratories and past-President of the Society for Industrial Microbiology and Biotechnology, currently Owner/President of Phoenix BioConsulting, LLC and CTO of Kalion Inc.: *Feedstock Chemicals from Biomass and the Art of French Cooking*
- Mr. Bill Cheswick, former member of the Technical Staff at AT&T Labs and Bell Labs: *Some Thoughts About Research, Passwords, and Researching Passwords*
- Dr. Jay Mancini, Physics Professor at Kingsborough Community College, visiting Research Professor at Stevens Institute of Technology, former Professor at Fordham University, former visiting Professor at University of Zurich: *What Einstein Forgot to Tell Us*

THE SELECTION PROCESS

To apply for the Governor's School in the Sciences, a student must be nominated by his or her high school's nominating committee. If the high school's junior class contains at most 325 students, only one student may be nominated for each Governor's School program. If the high school's junior class has between 326 and 650 students, two students may be nominated for each Governor's School program. Three students may be nominated only if the junior class comprises more than 650 students.

Students chosen by their high school's nominating committee are termed "nominees." The nominee is responsible for completing all parts of the application, ensuring that all necessary supplements (including official transcripts, copies of PSAT scores, and the principal's signature) are in order, and verifying that the application has been submitted before the postmark deadline date. **The application must be mailed by the high school, not the applicant, and sent directly to Drew University at the following address. Applications must be postmarked on or before January 9, 2015.**

NJ Governor's School in the Sciences
Drew University
36 Madison Avenue
Madison, NJ 07940

The Governor's School will confirm receipt of the application by late-February in an email to the applicant. At Drew University, a panel of professors, researchers, and educators will review nominees' applications. Using the criteria below, this panel will choose the scholars and invite those students to attend the Governor's School. The committee's decision will be emailed to the student on **April 3, 2015**. **Students who are selected, AND a parent/guardian, must then sign and return a commitment form. BOTH signed commitment forms must be postmarked on or before April 10, 2015. If one, or both, commitment forms are postmarked after April 10, 2015, your acceptance to the Governor's School will be rescinded.** The admissions process is very competitive; in recent years, 15% - 25% of nominees have been offered admission.

SELECTION CRITERIA

The selection committee for the Governor's School in the Sciences aims to craft a student body made up of New Jersey's most talented and enthusiastic students. Our student body should be diverse in myriad ways. Our students should possess a great range of gifts in technology, the arts, humanities, and the sciences. Overall, the committee chooses the students who will best take advantage of the opportunities presented by the Governor's School.

Decisions are based on the following qualitative and quantitative criteria:

- The student's high school transcript and class rank, which should demonstrate that the student is at or near the top of his or her class.
- The student's essays and reasons for wanting to attend the Governor's School.
- Letters of recommendation from science and math teachers.
- The student's extracurricular activities, work experience and community service pursuits.
- The student's academic and extracurricular honors and accomplishments.
- The student's standardized test scores (PSAT preferred).

We expect Governor's School scholars to exhibit great creativity and a unique passion for the nature of our Governor's School. We look for students who have shown a strong interest in science and mathematics, as well as an open mind and the ability to work on a team to explore these interests further. We want to know what a student hopes to gain from the Governor's School experience, as well as what he or she hopes to contribute to the program. In general, students who have demonstrated a fervent interest in science and mathematics both inside and outside of the classroom will be most successful in the admissions process. A student with perfect standardized test scores but only superficial interest in the nature of the school is not a competitive candidate. Of course, our scholars are not only devoted to science, but also have outstanding test scores and rank at the absolute top of their class. We are privileged to choose the best of the best.

CONTACT INFORMATION

Dr. Adam Cassano & Dr. Steve Surace, Co-Directors

Anna Mae Dinio-Bloch, Program Manager

Web: <http://www.drew.edu/govschool> (Sciences only)
<http://www.nj.gov/govschool/> (all programs)
Telephone: (973) 408-3605
Email: govschool@drew.edu

Postal Mail: NJ Governor's School in the Sciences
Drew University
36 Madison Avenue
Madison, NJ 07940

APPLICATION INSTRUCTIONS

Step 1: Review the program information and descriptions in this packet. **Please compile and submit your application packet in the order instructed.**

Step 2: Complete the Application Cover Sheet (page 5 of this packet). The Cover Sheet must be signed and dated by BOTH the student and parent/guardian. This should be the first page of your submitted application. Follow the instructions for the Online Student Application Information Form, as stated on the Cover Sheet. After you have completed and submitted the form, a notice will appear indicating that “your responses were successfully submitted” and a confirmation email has been sent to you. Print all the information included in the email (this is ALL the data you entered online) and attach it to the Cover Sheet of your application.

Step 3: After the printed Online Student Application Information Form applicant data, include the Application Checklist (page 6 of this packet). This must be signed by the nominee. Portions of the checklist must be completed and signed by your high school principal.

Step 4: After the Application Checklist, include a list of your Extracurricular Activities in order of their importance to you, with emphasis on activities requiring a substantial amount of your time. These can include school sponsored activities, work experience, community service, as well as science, artistic or athletic programs. Be sure to include leadership roles you hold in any of these activities and the amount of time you spend on these activities. Along with this list, please note any honors (academic or extracurricular) that you have received.

Step 5: After the Extracurricular Activities, include answers to each of the following essay questions. ***EACH ESSAY IS LIMITED TO ONE PAGE, SINGLE-SPACED, 12-POINT FONT.***

Essay 1) Attach an essay focusing on your scientific interests and aspirations, including any experiences that led to these interests.

Essay 2) Discovery is the hallmark of science. Attach an essay describing one discovery in science or math and the impact it has had on its field.

Step 6: After the Essays, include two Letters of Recommendation with original signatures, one must be from a science teacher and one must be from a mathematics teacher. A letter that is unsigned, or not from a science or mathematics teacher, will **NOT** be considered. Additionally, if both letters of recommendation are from two science teachers, or two math teachers, only **ONE** letter will be considered. The applicant must make sure that their teachers refer to our website <http://www.drew.edu/govschool/about-nigss> and go to “The Application” section for important guidelines on what information should be included in their recommendation letters.

Step 7: After the Recommendation Letters, verify that your school has included your Official Transcript, with your junior year grades. This must be an “official” transcript and include the school’s seal and/or any signature(s), if required or indicated on the transcript. If your junior year grades are not available at the time your application is submitted, your school should mail them to Drew University once they become available, and they must be postmarked on or before **February 16, 2015**. It is the applicant’s responsibility to ensure that their junior year grades have been submitted by their school and meet the postmark deadline date.

Step 8: After the Official Transcript, verify that your high school has included your Official 2014 PSAT Scores. If your most current scores are not available at the time your application is submitted and you wish to have those scores considered, your school should mail them to Drew University once they become available, and they must be postmarked on or before **February 16, 2015**, or they will **NOT** be considered. It is the applicant’s responsibility to ensure that their PSAT/SAT Scores have been submitted by their school and meet the postmark deadline date. If you did not take the PSAT in 2014, include your 2013 scores. You may include your SAT scores if you have not taken the PSAT. If you have not taken either the PSAT or the SAT, be sure your principal indicates this on the checklist.

Step 9: Once your application is complete, it is your responsibility to verify that the application has been mailed by your high school to Drew University and it must be postmarked on or before **January 9, 2015**.

DATES TO REMEMBER

January 9, 2015: Completed applications must be mailed by the high school to Drew University and postmarked by this date. **APPLICATIONS THAT ARE POSTMARKED AFTER THIS DATE WILL NOT BE CONSIDERED.**

February 16, 2015: Junior grades/PSAT scores postmark deadline date.

By late February, 2015: You will receive an email confirming the receipt of your application.

April 3, 2015: You will receive an email announcing the selection committee’s decision.

April 10, 2015: Commitment postmark deadline. **COMMITMENTS THAT ARE POSTMARKED AFTER THIS DATE WILL NOT BE CONSIDERED.**

July 12-August 1, 2015: The Governor’s School in the Sciences will be in session on the campus of Drew University.

The Governor's School of New Jersey



2015 GOVERNOR'S SCHOOL IN THE SCIENCES at Drew University

Application Cover Sheet

INSTRUCTIONS FOR ONLINE STUDENT APPLICATION INFORMATION FORM

Student Name (PRINT): _____

Student Email (PRINT): _____

School Name (PRINT): _____

Please visit the Governor's School in the Sciences website at:

<http://www.drew.edu/govschool/>

Follow the link to the 2015 Online Student Application Information Form:

1. Complete all fields and click on the "Submit Application Data" at the very end of the form.
2. You will receive a confirmation email immediately following submission. PRINT all the applicant data contained in the email.
3. Attach the printed document to this page.

**NOTE: IF THE ONLINE STUDENT APPLICATION INFORMATION FORM
IS NOT COMPLETED, OR IF THE PRINTED FORM
CONTAINING ALL THE APPLICANT DATA IS MISSING,
THE APPLICATION WILL NOT BE CONSIDERED.**

IMPORTANT DATES

January 9, 2015

Application postmark
deadline date

February 16, 2015

Junior grades/PSAT scores
postmark deadline date

Late-February 2015

Confirmation of receipt of
application by email

April 3, 2015

Admissions decisions
announced by email

April 10, 2015

Commitment forms
postmark deadline date

July 12 – August 1, 2015

The Governor's School in
the Sciences in session

STUDENT AND PARENT CERTIFICATION

___ I am a resident of New Jersey.

___ I expect to be a high school senior in the 2015-2016 school year.

___ I am willing and able to attend the entire Governor's School session.

Signature of Student

Date

This is to certify that I give my permission for the student named above to participate in the Governor's School in the Sciences at Drew University, in full-time residence.

Signature of Parent/Guardian

Date

APPLICATION CHECKLIST

(Please include this page as “Page 2” of your application)

NOMINEE'S CHECKLIST: ***INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED.***

- ☐ I've included the Application Cover Sheet, signed by both me and a parent/guardian, as the first page of my application. I have completed and submitted the Online Student Application Information Form, PRINTED all the applicant data and attached it to the Cover Sheet.
- ☐ I've included this Application Checklist, signed by both me and my principal.
- ☐ I've included a list of my Extracurricular Activities and my extracurricular and academic honors as per the Application Instructions on Page 4.
- ☐ I've included responses to two Essays as per the Application Instructions on Page 4.
- ☐ I've included two Letters of Recommendation with original signatures as per the Application Instructions on Page 4.
- ☐ My school has included my official high school transcript, as per the Application Instructions on Page 4. If my junior year grades were not included, I will ensure that my school mails them to Drew University by February 16, 2015 once they become available.
- ☐ My school has included copies of my official PSAT (or other standardized test) scores, as per the Application Instructions on Page 4. If my most current PSAT scores were not included, I will ensure that my school mails them to Drew University by February 16, 2015 once they become available.
- ☐ I am a resident of the state of New Jersey and will complete my junior year of high school in June 2015.
- ☐ I have kept a copy of my application for my own records.

I have reviewed the checklist above, and have included all necessary and appropriate application materials. All of the information submitted as part of my application is factual and truthful to the best of my knowledge.

Name of Nominee (Please Print)

Nominee's Signature

PRINCIPAL'S CHECKLIST:

- ☐ The nominee is one of our top students and has expressed a strong interest in the Governor's School in the Sciences.
- ☐ Our school has nominated the correct number of students. (If the junior class has 1 – 325 students, 1 nominee is permitted for each Governor's School program. If there are 326 – 650 students, 2 nominees are permitted for each Governor's School program. If there are more than 650 juniors, 3 nominees are permitted for each Governor's School program.)
- ☐ The nominee has included the Application Cover Sheet with the PRINTED applicant data from the Online Student Application Information Form attached, this checklist, a list of activities and honors, essay responses, and two letters of recommendation, as per the Application Instructions on page 4.
- ☐ I have included the nominee's "official" high school transcript and a copy of his or her PSAT (or other standardized test) scores, as per the Application Instructions on page 4 (**PLEASE BE AWARE OF POSTMARK DEADLINE DATES**).
 - ☐ The transcript includes grades from the first marking period of the 2014-2015 school year.
 - ☐ I will mail the student's junior year grades to Drew University by February 16, 2015 once they become available.
 - ☐ I have included the student's 2014 PSAT scores (preferred), or I will mail the student's most current scores to Drew University by the postmark deadline of February 16, 2015 once available.
 - ☐ The student did not take the PSAT in 2014. I have included his/her 2013 PSAT scores.
 - ☐ The student has not taken the PSAT. I have included the student's SAT scores.
 - ☐ No PSAT / SAT scores are available for this student.
- ☐ The nominee is a conscientious and eager student, and ranks near the top of his/her class.
- ☐ The nominee's standardized test scores are among the best in our school. The most competitive candidates have test scores above the 90th percentile, although students with lower scores may apply if they are otherwise a strong candidate.
- ☐ This student has not been nominated to more than one Governor's School.
- ☐ The nominating high school has kept a copy of this application on file.

I have reviewed the checklist above, and have included all necessary and appropriate application materials. All of the information submitted as part of my application is factual and truthful to the best of my knowledge.

Name of Principal (Please Print)

Principal's Signature